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UNITED STATES PUBLIC HEALTH SERVICE

THOMAS PARRAN, *Surgeon General*

COMMON COLDS

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II

COMMON COLDS

THE Public Health Service has been interested in the common cold for many years, primarily because of its widespread and disagreeable effects and harmful complications. Many extensive surveys and studies have been made by the Service with the hope that new facts might be discovered. Numerous articles and statements on the subject have been prepared by its officers, noteworthy among which was the helpful and readable popular account written by the late Dr. W. C. Rucker (*1*). This short article enjoyed a wide vogue and just popularity. The literature on influenza and the common cold has been interestingly reviewed by J. G. Townsend (2) of the Public Health Service.

There is nothing new or startling in the statements presented here—no revolutionary ideas as to the cause, prevention, or treatment of colds—merely a summary, meager in itself, of the best available present-day information on the subject.

Because it occurs so frequently, the disagreeable condition known as the common cold is usually lightly regarded. By many persons it is considered as a necessary and inevitable accompaniment of everyday life. That the malady causes suffering, inconvenience, economic loss, and is often the forerunner of more serious affections is overshadowed by its apparent triviality. However, it should be regarded as a potentially serious disease.

Definition.

Our knowledge of colds is so incomplete that an exact definition of the condition cannot be given. However, for practical purposes it may be said that a cold is an acute, self-limited infection which attacks the mucous membranes of the upper respiratory tract, ordinarily lasting from 7 to 9 days and frequently accompanied by serious complications. Ironically the expression "common cold" is applied to a group of infections which, far from depending upon cold as a causative factor, are frequently the direct result of living in close, overheated surroundings having a lower relative humidity than the driest desert known to man.

Symptoms.

The manifestations of a cold are so well-known through personal experience that it may seem superfluous to recount them. However, a brief review of the symptoms may enable a better understanding of this disagreeable condition. The affection often begins in the posterior nasal passages with a feeling of congestion, accompanied by frequent sneezing and a profuse watery discharge from the nose. As the inflammation extends,

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there is a feeling of soreness in the eyeballs, while the inflamed and tender mucous membrane of the throat feels harsh and dry.

During the course of a cold there is often a headache as well as a moderate and sometimes prolonged fever. When the disease extends to the larynx, trachea, and bronchi there may be hoarseness, cough, and a feeling of tightness or pain across the chest. Smillie (3) points out very properly that an uncomplicated cold is self-limited and that a prolongation or aggravation of symptoms is the result of complications. The onset of a cold is sudden, the principal symptoms, including rise in temperature, appearing within 1 or 2 days, after which the disease, if uncomplicated, subsides within 5 to 7 days.

In a study made by Collins and Gover (*4*) it was found that "the percentage of respiratory attacks accompanied by given symptoms varied widely with age, and a few symptoms showed definite differences between the sexes at specific ages. However, the great majority of symptoms occurred with about equal frequency in attacks among males and females."

Prevalence.

The extent to which colds prevail under varying conditions has been determined by numerous special studies. For instance, in a division of a large life insurance company in New York there were 2,824 colds among 6,700 workers during a year's time. The average amount of time lost by those having colds was 2.2 days. Studies among school children have disclosed the disturbing fact that common colds are responsible for approximately one-fourth of all absences. As the school system must be maintained even when many children are absent, the economic factor is readily discernible.

Townsend (*5*) found that among 685 adult white male students in Boston, there were 1,272 colds during a 5½-month period, October 15, 1923, to March 31, 1924, a rate for the period of 1.9 per person, an exceedingly high morbidity. From the illustrations that have been given it will be only too apparent that common colds are ubiquitous.

Studies have also been made to determine the seasonal distribution of colds, that is, their occurrence in relation to the seasons. On this point Townsend and Sydenstricker (*6*) concluded that there is a period of high prevalence in the early spring, a decline in midsummer, another period of high prevalence in autumn and some decline again in December. Forsythe (*7*) found, as a result of his studies at the University of Michigan, that "acute respiratory conditions are somewhat less frequent or less troublesome in females." However, this conclusion is at variance with the findings of an electric company in Boston, where respiratory infections were 70 percent higher among females, the study extending over a 10-year period.

It might be reasoned that colds are less frequent in warm, salubrious climates. However, Gover, Reed, and Collins (*8*), studying the data obtained from students in various universities in the United States over a period of 18 months, concluded that there is "no definite association of

respiratory attack rates with marked variations in climate as represented by six American cities with wide geographic and climatic differences." In another article Frost and Gover (*9*) stated that "for the year ended May 30, 1925, the mean attack rate in 10 groups of student reporters was 2,947 per 1,000, an average of approximately 3 attacks a person. There was no consistent relation of the incidence of colds to latitude, longitude, or climate." According to these writers the minimum attack rates prevail in the latter half of July and the first half of August, while the period of high incidence extends from September to March.

The common cold is no respecter of persons. It sweeps through an entire household, an entire city, an entire State, attacking the young, the adolescent, the middle-aged, and frequently carrying off the aged, the weak, and debilitated. Schools, factories, stores are suddenly crippled by epidemics of this sort, and the complications following the disease add to the great economic loss and suffering produced in this way. Very small babies, because they are less likely to be exposed to persons having colds, have this disease less frequently than older children. However, children under 5 years of age are more susceptible to colds than any other age group. As children become older there is a lessened tendency to colds. However, young adults are extremely susceptible to colds. While elderly persons are less likely to have colds than young adults, when they contract the disease it may be serious.

Judging from observation and experience there is little natural immunity to the common cold. Susceptibility to more than one attack seems to be almost universal. The strong and vigorous have their bouts with the malady with apparently the same frequency as the puny and delicate.

The cause of colds.

It will probably amaze many people to learn that the exact cause of the common cold, that is, the specific causative agent, remains unknown. Medical science has identified no organism, germ, or bacterium that gains access to the body from the outside and then proceeds to arouse the common cold, nor does medical science designate any definite change or combination of changes that may take place within the body as capable of setting up the cold. This may appear remarkable when viewed in the light of other discoveries and of the untold labor to discover the cause or causes and nature of the diseased condition termed the "common cold" on the part of hosts of distinguished students of disease the world over. It is not that complete ignorance reigns concerning the common cold. That the condition is caused by a very minute living agent—a filterable virus—that it is infectious, that is transmissible from person to person, are facts pretty well established. This filterable virus is a micro-organism much smaller than a bacterium and so small that it cannot be seen with a high-magnification microscope and will pass through the ordinary laboratory filters that hold back bacteria. And yet, thus far, the common cold has

defied all attempts to resolve it into its elementary or primal causative agents, and the mechanism of its onset is still obscure.

It is especially interesting to note that the virus is present in the nose and throat of the person ill with a cold particularly during the early stages of the infection. Moreover, the virus may be recovered from the filtered nasal secretions, cultivated in the laboratory, stored under suitable conditions, and transferred experimentally to other human beings and experimental animals.

Prevention of colds.

It was formerly taught that the maintenance of what was called "body resistance" was an effective defense against the common cold. Now there is reason to believe that the physically fit succumb to a cold almost as readily as the weak. The principal advantage in maintaining physical efficiency is that the manifestations of a cold may be somewhat curtailed and the uncomfortable consequences modified when one is strong and well at the onset. The proneness of the common cold to attack the strong and vigorous is analogous to the havoc wrought by influenza, a disease that may be closely related. It will be remembered that during the last great influenza epidemic many healthy young adults, presumably in the "pink of condition," were stricken.

A good deal has been said about "hardening" people so that they will not contract colds. There is an element of danger in this, since to expose a weak person to the rigors of cold baths and cold drafts is likely to lower resistance, thus favoring the very condition it is desired to avoid. At the same time it should not be forgotten that the Arctic explorer does not ordinarily have colds so long as he stays out in the open. Rosenau (*10*) says that "it is not the engineer and the firemen in the cold, drafty cab who catch colds, but those who ride in the dusty, overheated coaches behind." When all is said it must be admitted that dry, overheated rooms perhaps play an important role in producing colds.

For the average person there is probably no better insurance against colds than a sedulous avoidance of overheavy or overwarm clothing and superheated dwellings or workrooms in winter. The too sudden exposure of the overly warm body to a cooler atmosphere is undoubtedly one of the most common excitants of colds in winter. To minimize the chances of this, those of us who work and live indoors should wear ordinary clothes—from underwear to outer house and shop garments—of a weight that is regulated, not by the 20° or 30° that we expect outside, but by the 60° or 70° that should reign indoors. The demands of the colder temperature without can best be met by overcoats of a weight to fit the occasion. Within doors and out the chances of perspiring upon ordinary exertion should be cut to a minimum unless the means are at hand for a suitable change to dry clothing.

Yet, perhaps more important than anything else is the need for habituating ourselves to temperatures of not more than 70° when at bodily rest

indoors. It is at about this level of the thermometer that the healthy body functions best and it can readily adjust itself to transitions to cooler atmospheres. Again, this temperature will permit of a relative humidity that taxes the mucous membranes of the air passages much less than the drier atmospheres and higher temperatures which maintain in artificially heated spaces.

To recommend that the "cold" infection be avoided may appear to be rather difficult advice to follow, yet obvious precautions may be taken. Manifest sources of infection, such as persons with a cold in a family or workplace can, within limitations, be shunned. Certainly if the sick person is ordered away or remains away voluntarily, the opportunity for the spread of the disease will be correspondingly lessened. It is greatly to be hoped that far-seeing supervisors will some day enforce a rule against the presence in schools, offices, and other places in which people congregate, of persons having colds. Not only would the infectious individuals be removed but the best possible treatment for the condition, rest, would be supplied. Of course, without voluntary compliance on the part of the sufferer with the spirit of such a rule, little may be expected in the way of beneficial results.

Increased educational efforts are needed for the segregation, even punishment, of infected persons who sneeze, cough, and spit while in proximity to others. To commit these acts without benefit of a shielding and disposable handkerchief, is reprehensible.

The handling of inanimate objects that may have been freshly soiled with the secretions from the nose and mouth of a person suffering from a cold should, of course, be avoided. This brings up two additional points of importance, namely, the danger attending the putting of fingers to the nose and mouth, as well as the necessity for washing the hands before eating. In this connection the desirability of sterilizing eating utensils, not only in public places but also in private homes, deserves a fair share of consideration.

Vaccines.

The physician is frequently asked whether a stock vaccine such as may be obtained from a biologic manufacturing firm is useful as a cold preventive. While there is no unanimity of opinion on the subject, the majority of observers aver that the mixed vaccine, in which the various organisms found in the nose and throat are utilized, is not helpful in preventing colds. At the same time it is reasonable to expect that when a vaccine is produced from the filterable virus responsible for colds, an agent of considerable efficacy will become available. If, in the opinion of the attending physician, a suitably prepared vaccine is helpful in preventing the complications of the common cold, the prophylactic may be tried.

There is no good reason for believing that a cold may be prevented by the use of a special diet, not even when certain vitamins are present in extra quantities. In some quarters the efficacy of vitamin C has been extolled in this connection, even so humble a medium as the cough drop

having been utilized as a vehicle. However, the proof of such benefits is not convincing.

Treatment.

If every person having a cold would go to bed for a day or two several desirable objectives would be achieved; first, a cold-spreader would be removed from circulation, and, second, the patient himself would be receiving the best possible treatment—rest. Despite extravagant claims made in behalf of proprietary preparations and the belief of many individuals that they have personal knowledge of how colds may be "broken up," the fact remains that there is no specific treatment. It should again be recalled that a cold is a self-limited disease and that what is done in the way of treatment merely reduces the intensity rather than curtails the manifestations.

Many of the nostrums recommended as cold preventives and cures contain harmful drugs and alcohol, the latter often predominating. Self-medication or prescribing by untrained persons is usually dangerous and as a rule much inconvenience and suffering will be obviated by consulting a competent physician promptly. What will the physician do? First of all the patient will be ordered to bed, kept comfortably warm, and protected from drafts. If necessary, pains and aches will be relieved by the use of simple remedies. The patient will be kept in bed at least 24 hours after the fever has subsided and longer if necessary.

Probably no form of treatment other than rest is so soothing to a person with a cold as a hot tub bath lasting 15 to 20 minutes. As such a bath is debilitating because of excessive perspiration, delicate persons should be guarded against too lengthy an immersion. Care should also be taken against chilling and exposure during and after leaving the bath. Perspiration may be promoted by the ingestion of hot natural acidulated drinks such as those prepared from oranges, lemon, and grapefruit. A hot bath soothes aching limbs, causes drowsiness, and frequently results in refreshing sleep.

At times the headache and general aching may be sufficiently severe to warrant the administration of a sedative. It may be, too, that the mucous membrane of the nose will become sufficiently congested to make breathing difficult and interfere with drainage of the excessive secretion. For these conditions a physician can prescribe remedies that will bring relief. A popular home remedy for this condition is provided through the cautious inhalation of a vapor produced by a mixture of compound tincture of benzoin and boiling water. This vapor is soothing to the inflamed mucous membrane and may be provided by home equipment or by means of an electric vaporizer obtainable at small cost. Rather than take patent remedies or rely upon the uncertain suggestions of well-meaning friends, a person suffering from a cold should summon a physician. Moreover, when a drug is required for the purpose of affording relief, it should be obtained upon the prescription of a competent doctor of medicine.

There was an old saying, "Feed a cold and starve a fever," but it no longer holds good. The present-day conception is that a fever patient requires a nutritious maintenance diet while a person with a cold gets

along best on light, nourishing, and attractive articles of food, adapted largely to the patient's inclination.

It is frequently advised that a patient with a cold be given a brisk purge, but there appears to be no good reason for adding to his inconvenience in this way unless there are pointed indications. If at the onset of the cold the bowels are normally active, the administration of a purgative may be omitted.

The treatment of untoward symptoms, such as cough, pain, lasting aches, earache, sore throat, and the like, call for the services of a physician, not only for treatment but for the establishment of a diagnosis, lest complications result.

In most instances, of course, special medical treatment for colds is unnecessary. The real problem is to distinguish between a simple cold and one that is complicated and potentially serious. Obviously it is not easy for a lay person to make such a distinction; hence the desirability, when practicable, of summoning medical aid.

The details of the home treatment of colds, as well as more complete discussions of the various phases of the subject, are contained in numerous popularly written books, of which that by Wells (*11*) may be cited as an example. Helpful information likewise appears in the Modern Home Medical Adviser (*12*), edited by Dr. Morris Fishbein of the American Medical Association.

Complications.

The common cold, comparatively simple and harmless in itself, is potentially dangerous because of its complications. To appreciate the possibilities in this direction it should be known that certain bacteria normally inhabit the mucous membranes of the nose and throat without producing signs and without manifesting symptoms. However, the normally inactive organisms appear to take advantage of favorable conditions such as are provided by inflamed tissues and produce the specific diseases with which they are associated.

Very often, too, there is an extension of the inflammatory cold process to the air chambers and canals adjoining the nose and throat. In this way the middle ear and the sinuses may become unpleasantly involved. There may also be an extension of the inflammation to the trachea and bronchi, thereby setting up what is known as a "chest cold," associated with hoarseness, cough, tightness or pain in the chest, fever, and varying degrees of physical incapacity.

A common cold often precedes an attack of pneumonia. However, the mechanism by which pneumonia organisms, often normal residents of the nose, mouth, and throat, are excited to detrimental activity can only be conjectured. It is likely that favorable soil is prepared by the filterable virus responsible for colds and a more serious disease is inaugurated. It is as if the quiescent bacteria act as a low pilot light to be spurred to intense activity by the sparklike filterable virus. This comparison accounts only too well for recurring attacks of sinusitis.

If for no other reason than preventing the onset of pneumonia, it is worth while to manage a common cold with intelligence and promptness.

One of the unpleasant accompaniments of a cold, due in all probability to unrecognized complications, is a prolongation of symptoms, particularly manifested by weakness, lassitude, and slow return to normal health. These are far out of proportion to the apparent severity of the disease.

Diseases resembling colds.

A very important reason for securing the advice, counsel, and practical aid of a physician in the presence of an apparent cold is the possibility that the condition may not be a cold but a beginning infectious disease such as measles, whooping cough, scarlet fever, tonsillitis, diphtheria, or other serious acute affection. This applies particularly to the initial symptoms of such diseases in children when an early and accurate diagnosis is greatly to be desired if adequate treatment is to be afforded and isolation effected.

Disinfection.

Health officers are frequently asked how to disinfect a room after a person has recovered from a cold. Excellent advice on this subject appears in the booklet, "The Control of Communicable Diseases" (*13*), prepared by a committee of the American Public Health Association. It may be well to repeat the advice that during the course of the illness the nasal and oral discharges of the patient should be collected, preferably in soft paper, and destroyed by burning, placed in the toilet, or otherwise disposed of to avoid contamination of the hands and articles in common use. Terminal disinfection is not required after recovery, dependence being placed upon airing and sunning of the room and bedding.

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